

LAMPIRAN A (Hasil Simulasi Manual Tamiya)

Tabel A.1 Hasil simulasi manual tamiya (50 unit/jam)

Replikasi	Waktu proses (detik)		
	St 1	St 2	St 3
1	61,61	56,68	72,54
2	91,08	56,95	62,05
3	68,13	69,5	69,12
4	84,24	60,03	70,59
5	85,52	82,85	70,35
6	71,89	103,73	65,55
7	82,01	91,91	72,97
8	76,61	89,83	76,05
9	75,99	80,38	72,94
10	87,78	88,48	77,04
11	70,35	88,59	79,91
12	87,27	100,47	63,73
13	92,39	103,27	70,95
14	68,24	77,62	63,56
15	80	101,59	68,95
16	63,21	100,31	69,59
17	77,03	107,42	62,83
18	71,45	90,52	71,38
19	68,45	100,3	59,42
20	76,39	78,38	57,93
21	77,13	81,95	55,98

Replikasi	Waktu proses (detik)		
	St 1	St 2	St 3
22	85,2	82,38	68,17
23	64,2	73,01	75,94
24	82,71	80,5	68,03
25	69,34	75,28	72,14
26	76,92	81,83	75,6
27	67,54	95,4	65,58
28	59,8	86,56	60,9
29	67,99	78,78	62,83
30	67,95	85,4	70,52
31	75,2	86,84	58,04
32	89,71	64,02	65,91
33	71,12	72,86	71,99
34	78,78	77,55	60,23
35	68,09	71,81	61,02
36	70,51	80,99	63,34
37	66,41	74,13	76,34
38	67,55	71,97	58,55
39	65,47	75,76	61,34
40	70,43	62,1	64,14
41	73,02	63,42	60,37
42		81,16	69,14

Tabel A.2 Hasil simulasi manual tamiya (70 unit/jam)

Replikasi	Waktu proses (detik)			
	St 1	St 2	St 3	St 4
1	54,66	60,56	46,27	50,49
2	48,47	61,98	49,25	53,06
3	46,56	58,04	41,78	50,73
4	42,45	64,47	51,25	49,27
5	49,84	64,44	47,35	50,28
6	46,02	68,56	50,37	60,84
7	50,08	58,36	50,77	50,08
8	42,79	62,49	51,79	46,77
9	38,56	71,23	46,44	46,81
10	48,35	73,83	44,33	45,54

Replikasi	Waktu proses (detik)			
	St 1	St 2	St 3	St 4
31	44,58	65,48	41,09	50,42
32	45,48	58,81	40,47	52,16
33	48,3	56,08	45,63	49,74
34	44,59	54,5	44,59	45,87
35	43,19	52,54	45,6	51,6
36	47,05	64,95	45,98	42,99
37	39,8	51,54	42,25	50,15
38	43,56	53,96	42,89	47,56
39	49,53	49,72	42,99	44,48
40	46,27	48,89	45,52	44,77

Lanjutan Tabel A.2 Hasil simulasi manual tamiya (70 unit/jam)

Replikasi	Waktu proses (detik)			
	St 1	St 2	St 3	St 4
11	46,63	68,41	47	52,16
12	47,45	64,34	45,99	46,77
13	43,45	68,13	44,55	50,72
14	50,93	71,54	44,59	55,72
15	47,11	72,25	39,44	53,96
16	42,31	67,53	42,26	47,28
17	40,65	67,14	46,41	49,08
18	51,34	60,88	51,39	48,11
19	42,87	67,84	53,58	43,41
20	49,22	64,65	46	51,09
21	45,45	67,7	49,15	59,91
22	50,3	66,18	42,52	47,63
23	50,74	69,23	43,37	51,05
24	40,36	67,25	49,86	54,38
25	46,84	51,85	42,91	45,45
26	44,48	61,37	45,68	44,86
27	48,36	62,02	41,87	50,73
28	49,51	55,33	46,57	46,06
29	48,52	52,8	43,48	50,99
30	41,46	57,45	48,45	47,66

Replikasi	Waktu proses (detik)			
	St 1	St 2	St 3	St 4
41	49,05	57,96	38,7	51,58
42	47,14	58,29	44,47	52,84
43	45,77	57,37	47,97	46,04
44	46,69	52,18	44,8	53,31
45	44,74	51,88	42,68	43,92
46	40,81	51,77	41,12	44,37
47	41,98	59,56	46,58	43,06
48	41,04	53,38	39,45	47,31
49	37,16	59,77	44,96	47,1
50	37,66	51,35	47,7	47,52
51	42,07	57,61	40,2	47,66
52	40,5	58,95	43,48	40,05
53	41,49	50,49	46,09	41,66
54	40,02	57,94	46,26	46,79
55	43,18	67,41	49,13	45,74
56	40,04	52,97	48,95	47,06
57	40,06	60,43	42,08	51,14
58	45,99	60,39	45,64	42,24
59	45,61	54,49	42,34	46,94
60	37,18	59,2	42,88	45,79

Tabel A.3 Hasil simulasi manual tamiya (86 unit/jam)

Replikasi	Waktu proses (detik)				
	St 1	St 2	St 3	St 4	St 5
1	52,8	45,2	26,8	24,6	28,3
2	44,4	45,9	26	41,6	32,3
3	57,7	49,3	30,6	44,5	40,8
4	43,6	51,1	27,1	51,9	31,7
5	40,6	46,6	31,4	37,4	37,2
6	36	40,9	28,3	37,6	32,5
7	43,4	43,2	28,6	43,9	29,3
8	31,8	46,3	26,3	40,5	35,6
9	33,3	47,8	22,7	31,5	32,2
10	38,5	44,1	32,3	27	31,4
11	41,2	46	24	34,4	40,8
12	32,8	39,5	28,4	37,6	40,7
13	56,4	32,7	30,4	59,4	43,7
14	50,2	51,3	30,7	42,1	35,5
15	37,1	49	29,2	44,8	35,8

Replikasi	Waktu proses (detik)				
	St 1	St 2	St 3	St 4	St 5
41	47,4	45,3	34,9	34,4	33,5
42	36,6	44,5	28,1	32,1	30,5
43	41,9	51,3	22,4	31,9	30,5
44	36,9	39,4	29,2	33,4	33,8
45	33,2	39	29,3	37,9	35,3
46	36,7	50	19,6	33,4	36,2
47	45,2	42,6	25,8	44,8	34,2
48	35	40,4	26,8	27,4	28,4
49	34,8	38,8	36	41	34,4
50	37,2	40,4	29	32,6	36,2
51	38,1	36	25,2	40,4	36,3
52	35,3	44	26	33,7	37,6
53	35,5	47	39,2	33,2	36
54	38,5	46,9	31,3	40,3	37,6
55	31,6	39,9	29,9	34,6	34,4

Lanjutan Tabel A.3 Hasil simulasi manual tamiya (86 unit/jam)

Replikasi	Waktu proses (detik)				
	St 1	St 2	St 3	St 4	St 5
16	41,8	48,4	27,9	37,2	40,5
17	47,5	48,5	36,3	40	37,9
18	38,4	52,8	29,3	38,6	36,1
19	30,7	46,3	29,3	37,9	41,7
20	33,4	41,3	29,2	41,5	35,6
21	32,3	45,4	28,9	36,6	38,7
22	25,6	49,5	25,5	24,3	34,8
23	39,2	52,4	29,5	29	40,8
24	40,7	41,5	29,3	57,7	37
25	44,9	51,5	27,5	41,7	31,3
26	40,8	41	28	31,9	36
27	36,5	42,7	25	36,6	33,1
28	37,4	42,7	40,1	23,7	31,2
29	41,4	41,5	21,9	45,8	36
30	38,2	39,8	32	45,8	34,7
31	32,4	38	29,3	43,5	32,3
32	30,9	42	25,5	30,6	37,1
33	41,5	40,8	30,3	24,9	46,6
34	43,7	42,8	28	36,1	31,4
35	38,9	46	34	46,4	33,2
36	40,4	45,4	32	31,1	34
37	28,2	37,6	32,9	24,2	35
38	40,8	39,8	30,1	32,7	30
39	32,7	43	26,7	24,1	28
40	33,1	41,5	30,6	26	32

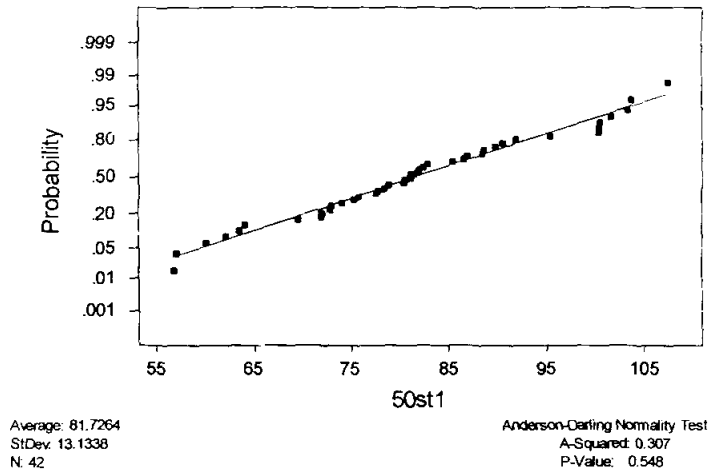
Replikasi	Waktu proses (detik)				
	St 1	St 2	St 3	St 4	St 5
56	41,1	40,8	30,7	28,3	29,4
57	38,6	46,9	35,1	30,3	34,3
58	35,6	39,5	27,2	33,2	34,7
59	30,4	43	28,4	24,3	29,4
60	31	38,8	33,4	32,5	33,1
61	34,7	40	29,2	26,5	32,9
62	33,5	45,3	30,2	26,5	33,2
63	28,6	37,4	32,1	35,3	34,2
64	40,6	46,2	32,3	20,8	35
65	38,6	43	27,3	28,1	36,7
66	39	50,5	24,8	34,1	34
67	45,2	46,1	35	33,8	34,8
68	37,9	46,9	35,6	29,6	41
69	33,9	45,1	32,7	47,2	35,2
70	41,5	45,3	27,2	40,7	37
71	39,5	48,7	29,6	23,4	30,6
72	39	56,6	24,3	32,9	38,5
73	33,5	41,7	29,9	31,5	32,7
74	29,2	34,2	30,3	40,1	33,7
75	28,2	42,5	27,1	34,7	41,5
76	35,6	41,7	35,2	33,1	35,8
77	38,7	41,2	19,7	37,8	27,9
78	26,5	40	18,3	37,9	37,9
79	28		25,7	25,2	30,1
80					

## LAMPIRAN B (Uji Normality Test)

### 1. Uji normality test 50 unit/ jam

#### 1.1 Stasiun 1

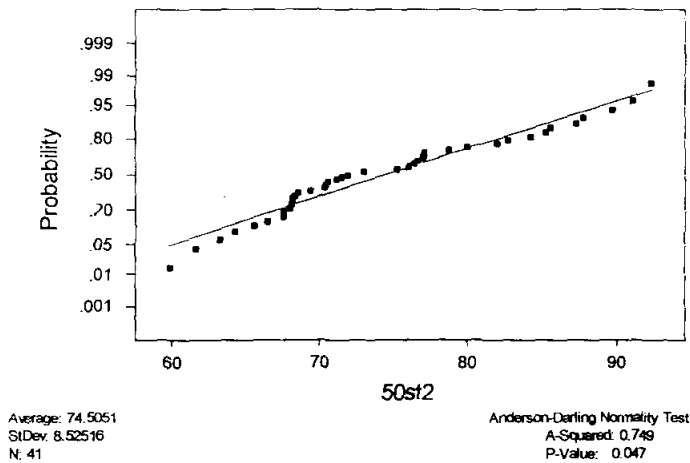
##### 50 unit/jam - Stasiun 1



Gambar B.1 Uji Normal Simulasi Tamiya 50 unit/jam (1)

#### 1.2 Stasiun 2

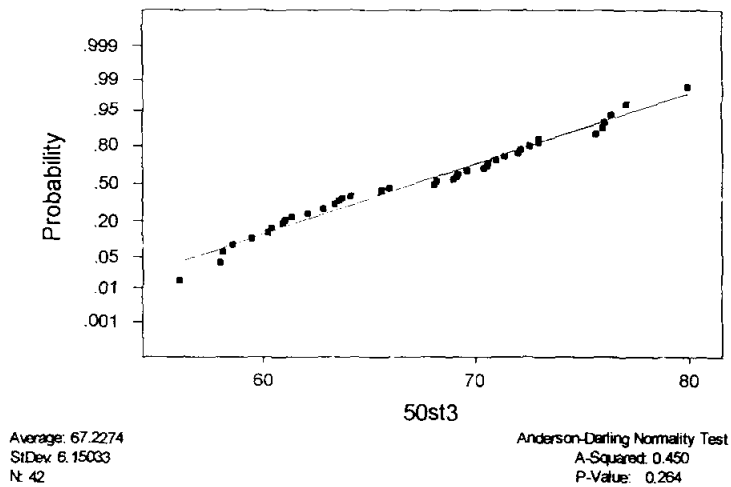
##### 50 unit/jam - Stasiun 2



Gambar B.2 Uji Normal Simulasi Tamiya 50 unit/jam (2)

## 2.3 Stasiun 3

### 50 unit/jam - Stasiun 3

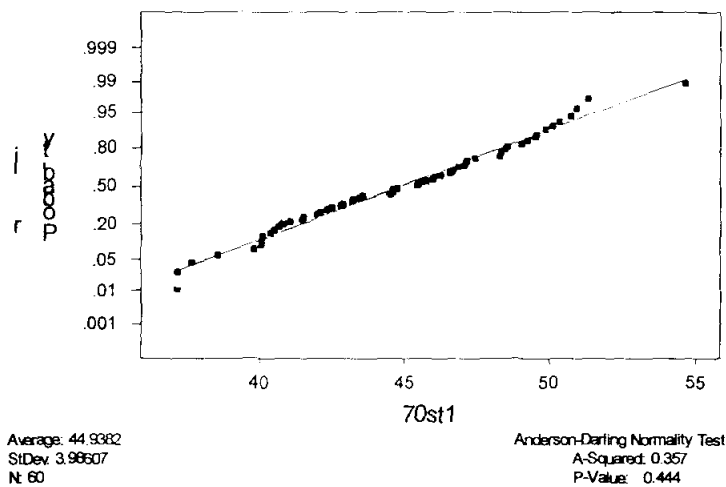


Gambar B.3 Uji Normal Simulasi Tamiya 50 unit/jam (3)

## 2. Uji normality test 70 unit/ jam

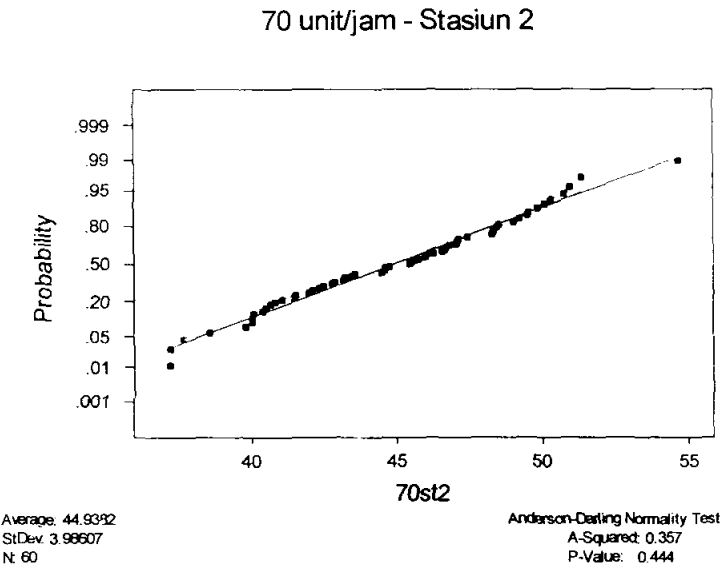
### 2.1 Stasiun 1

#### 70 unit/jam - Stasiun 1



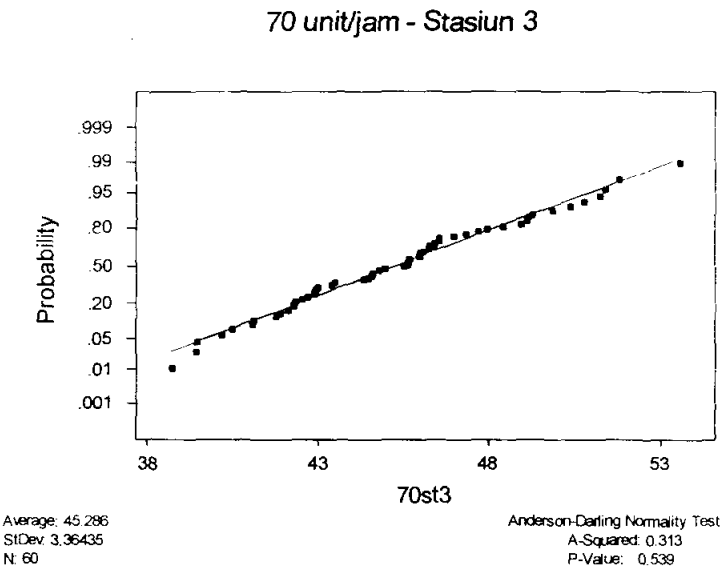
Gambar B.4 Uji Normal Simulasi Tamiya 70 unit/jam (1)

2.2 Stasiun 2



Gambar B.5 Uji Normal Simulasi Tamiya 70 unit/jam (2)

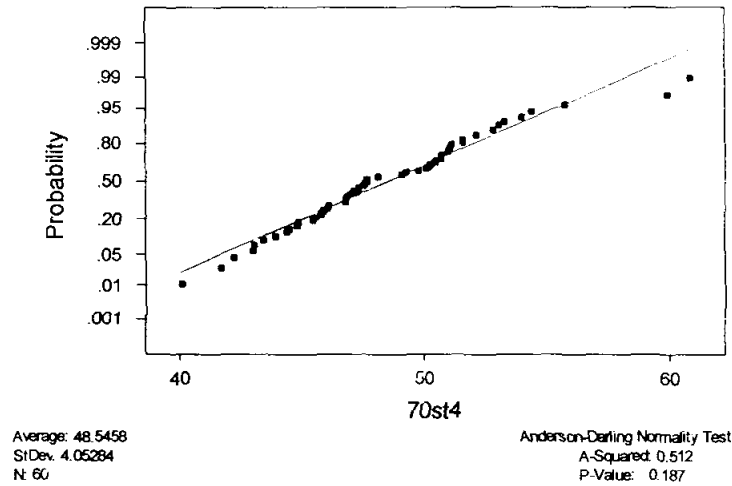
2.3 Stasiun 3



Gambar B.6 Uji Normal Simulasi Tamiya 70 unit/jam (3)

2.4 Stasiun 4

70 unit/jam - Stasiun 4

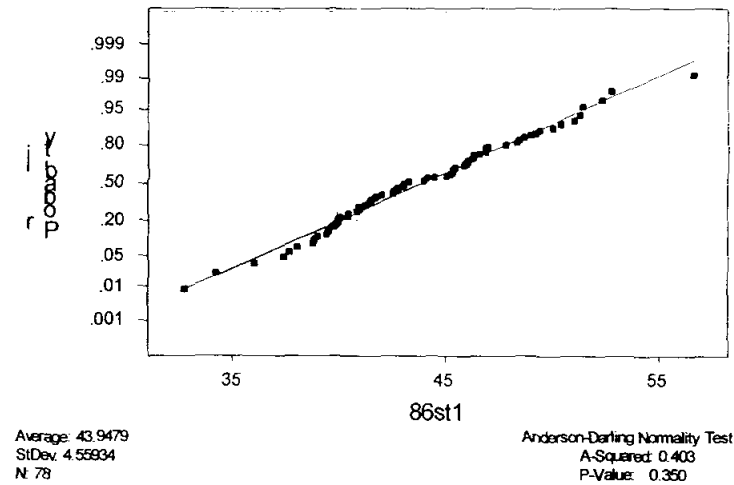


Gambar B.7 Uji Normal Simulasi Tamiya 70 unit/jam (4)

3. Uji normality test 86 unit/ jam

3.1 Stasiun 1

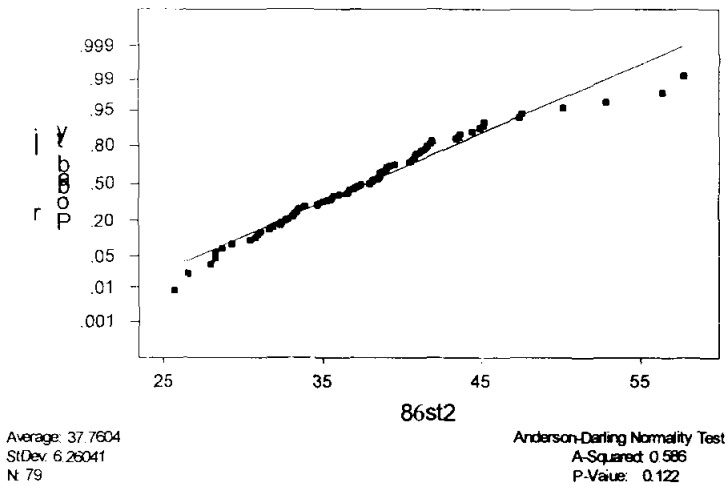
86 unit/jam - Stasiun 1



Gambar B.8 Uji Normal Simulasi Tamiya 86 unit/jam (1)

3.2 Stasiun 2

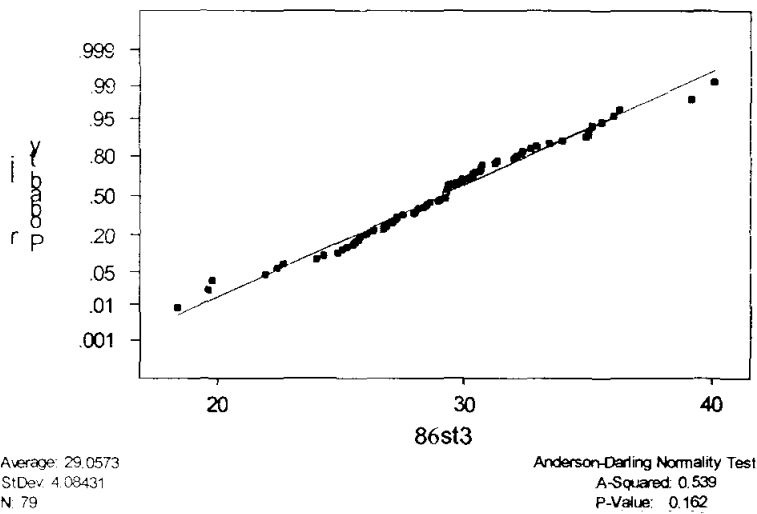
86 unit/jam - Stasiun 2



Gambar B.9 Uji Normal Simulasi Tamiya 86 unit/jam (2)

3.3 Stasiun 3

86 unit/jam - Stasiun 3

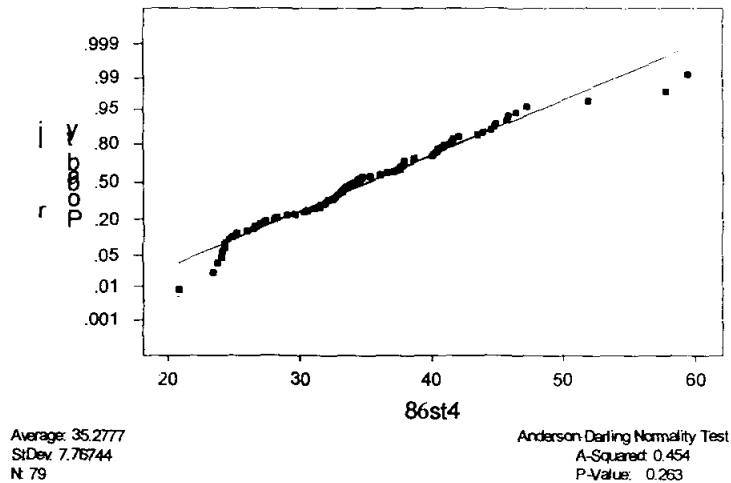


Gambar B.10 Uji Normal Simulasi Tamiya 86 unit/jam (3)



3.4 Stasiun 4

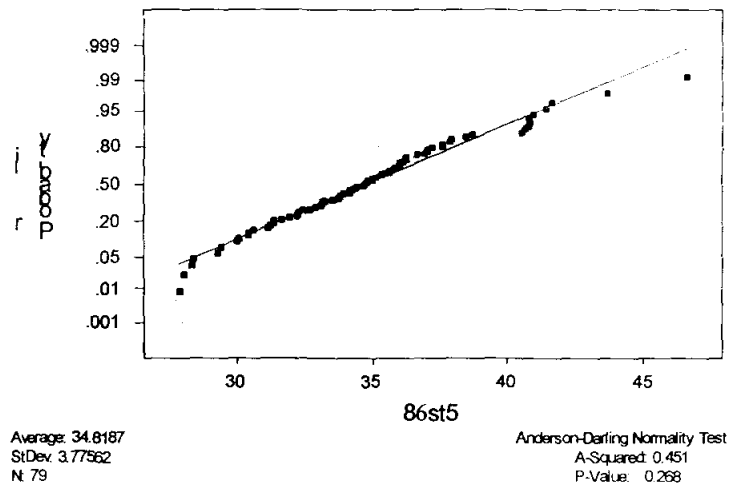
86 unit/jam - Stasiun 4



Gambar B.11 Uji Normal Simulasi Tamiya 86 unit/jam (4)

3.5 Stasiun 5

86 unit/jam - Stasiun 5



Gambar B.12 Uji Normal Simulasi Tamiya 86 unit/jam (5)

## LAMPIRAN C (Uji Distribusi Manual Tamiya)

### 1. Uji distribusi simulasi Tamiya 50 unit/ jam

#### 1.1 Stasiun 1

##### Auto::Fit Distributions

distribution	rank	acceptance
Weibull[56.7, 1.99, 28.5]	100	accept
Triangular[55.7, 112, 79.8]	85.9	accept
Beta[56.7, 107, 1.45, 1.55]	61.7	accept
Erlang[56.7, 3, 8.35]	45.9	accept
Pearson 6[56.7, 641, 2.65, 67.1]	38.9	reject
Log-Logistic[56.7, 2.57, 23.6]	34	reject
Gamma[56.7, 2.64, 9.47]	30.2	reject
Uniform[56.7, 107]	15.6	reject
Lognormal[56.7, 3.02, 0.903]	0.942	reject
Exponential[56.7, 25]	0.00835	reject
Pareto[56.7, 2.83]	0.000461	reject
Pearson 5[56.7, 0.574, 3.99]	1.08e-05	reject
Inverse Gaussian[56.7, 9.6, 25]	1.26e-08	reject

Gambar C.1 Uji Distribusi Simulasi Tamiya 50 unit/jam (1)

#### 1.2 Stasiun 2

##### Auto::Fit Distributions

distribution	rank	acceptance
Pearson 6[59.8, 43.8, 3.81, 12]	100	accept
Lognormal[59.8, 2.54, 0.634]	96.1	accept
Triangular[58.8, 96.1, 68.8]	90.2	accept
Log-Logistic[59.8, 2.78, 13.1]	78.7	accept
Weibull[59.8, 1.94, 17]	72.2	accept
Gamma[59.8, 3.51, 4.19]	66.6	accept
Inverse Gaussian[59.8, 31.3, 14.7]	57.2	accept
Pearson 5[59.8, 2.27, 22.7]	44.5	accept
Beta[59.8, 92.4, 1.58, 1.85]	39.5	reject
Erlang[59.8, 4, 3.68]	34.7	reject
Uniform[59.8, 92.4]	2.8	reject
Exponential[59.8, 14.7]	0.0925	reject
Pareto[59.8, 4.68]	0.0143	reject

Gambar C.2 Uji Distribusi Simulasi Tamiya 50 unit/jam (2)

## 1.3 Stasiun 3

## Auto::Fit Distributions

distribution	rank	acceptance
Beta[56, 79.9, 1.79, 2.04]	100	accept
Weibull[56, 2.05, 13]	79.5	accept
Pearson 6[56, 1.75e+04, 2.99, 4.54e+03]	41.2	reject
Log-Logistic[56, 2.68, 10.4]	36.6	reject
Triangular[55, 82.4, 62.8]	33.9	reject
Erlang[56, 3, 3.75]	24.9	reject
Gamma[56, 3.47, 3.24]	21.4	reject
Lognormal[56, 2.27, 0.651]	15.9	reject
Uniform[56, 79.9]	11.7	reject
Pearson 5[56, 2.2, 16.7]	4.12	reject
Inverse Gaussian[56, 23.2, 11.2]	3.97	reject
Exponential[56, 11.2]	0.834	reject
Pareto[56, 5.59]	0.238	reject

Gambar C.3 Uji Distribusi Simulasi Tamiya 50 unit/jam (3)

## 2. Uji distribusi simulasi Tamiya 70 unit/ jam

## 2.1 Stasiun 1

## Auto::Fit Distributions

distribution	rank	acceptance
Beta[48.9, 73.8, 1.48, 1.77]	100	accept
Weibull[48.9, 1.86, 13]	62.2	accept
Pearson 6[48.9, 1.95e+03, 2.54, 428]	40.6	accept
Gamma[48.9, 2.67, 4.27]	26.5	reject
Log-Logistic[48.9, 2.41, 10.2]	26.5	accept
Erlang[48.9, 3, 3.8]	20.9	reject
Triangular[47.9, 77, 53.2]	6.69	reject
Uniform[48.9, 73.8]	6.22	reject
Lognormal[48.9, 2.24, 0.743]	4.98	reject
Inverse Gaussian[48.9, 15.7, 11.4]	0.177	reject
Pearson 5[48.9, 1.58, 10.4]	0.0737	reject
Exponential[48.9, 11.4]	0.0267	reject
Pareto[48.9, 4.9]	0.00409	reject

Gambar C.4 Uji Distribusi Simulasi Tamiya 70 unit/jam (1)

## 2.2 Stasiun 2

**Auto::Fit Distributions**

distribution	rank	acceptance
Triangular{36.2, 55.4, 43.5}	97.5	accept
Weibull{37.2, 1.96, 8.77}	58.3	reject
Beta{37.2, 54.7, 1.66, 2.23}	51.2	reject
Lognormal{37.2, 1.83, 0.982}	0.206	reject
Uniform{37.2, 54.7}	0.112	reject
Pearson 5{37.2, 0.358, 0.345}	0	reject

Gambar C.5 Uji Distribusi Simulasi Tamiya 70 unit/jam (2)

## 2.3 Stasiun 3

**Auto::Fit Distributions**

distribution	rank	acceptance
Weibull{38.7, 2.16, 7.55}	100	accept
Beta{38.7, 53.6, 2.06, 2.61}	89	accept
Pearson 6{38.7, 1.72e+04, 3.62, 9.3e+03}	58.1	accept
Log-Logistic{38.7, 3, 6.13}	50.2	accept
Triangular{37.7, 54.2, 44.6}	46.6	accept
Erlang{38.7, 4, 1.65}	43	reject
Gamma{38.7, 3.75, 1.76}	41.8	reject
Lognormal{38.7, 1.75, 0.627}	16.3	reject
Inverse Gaussian{38.7, 13.4, 6.59}	1.67	reject
Pearson 5{38.7, 2.08, 9.18}	0.662	reject
Uniform{38.7, 53.6}	0.021	reject
Exponential{38.7, 6.59}	0.000938	reject
Pareto{38.7, 6.47}	0.000126	reject

Gambar C.6 Uji Distribusi Simulasi Tamiya 70 unit/jam (3)

## 2.4 Stasiun 4

**Auto::Fit Distributions**

distribution	rank	acceptance
Pearson 6(40, 403, 4.68, 219)	100	accept
Log-Logistic(40, 3.6, 7.99)	77.5	accept
Erlang(40, 5, 1.7)	71.1	accept
Lognormal(40, 2.04, 0.502)	66.5	accept
Gamma(40, 5.39, 1.58)	64.4	accept
Weibull(40, 2.35, 9.76)	64.1	accept
Beta(40, 60.8, 2.7, 3.87)	60	accept
Inverse Gaussian(40, 31.5, 8.5)	34.4	accept
Pearson 5(40, 3.65, 24.4)	13.2	reject
Exponential(40, 8.5)	1.81e-05	reject
Pareto(40, 5.29)	0	reject
Triangular(40, 61, 60.7)	0	reject
Uniform(40, 60.8)	0	reject

Gambar C.7 Uji Distribusi Simulasi Tamiya 70 unit/jam (4)

## 3. Uji distribusi simulasi Tamiya 86 unit/ jam

## 3.1 Stasiun 1

**Auto::Fit Distributions**

distribution	rank	acceptance
Beta(32.7, 56.6, 3.39, 3.85)	92	accept
Weibull(32.7, 2.79, 12.8)	91	accept
Pearson 6(32.7, 31.3, 7.53, 21.7)	61.1	accept
Log-Logistic(32.7, 4.11, 10.7)	58.7	accept
Gamma(32.7, 6.9, 1.62)	50.2	reject
Erlang(32.7, 7, 1.6)	49.1	reject
Lognormal(32.7, 2.34, 0.45)	46.7	reject
Inverse Gaussian(32.7, 50.3, 11.2)	17.8	reject
Triangular(31.7, 57.3, 42.9)	14.5	reject
Pearson 5(32.7, 4.1, 37.6)	12.3	reject
Uniform(32.7, 56.6)	0.00027	reject
Exponential(32.7, 11.2)	0	reject
Pareto(32.7, 3.46)	0	reject

Gambar C.8 Uji Distribusi Simulasi Tamiya 86 unit/jam (1)

## 3.2 Stasiun 2

**Auto::Fit Distributions**

distribution	rank	acceptance
Weibull[25.6, 2.1, 13.9]	87.2	accept
Erlang[25.6, 4, 3.03]	85.7	accept
Gamma[25.6, 3.77, 3.21]	79.8	accept
Log-Logistic[25.6, 3.13, 11.3]	74.8	accept
Beta[25.6, 57.7, 2.18, 3.57]	50.4	accept
Pearson 6[25.6, 95.6, 3.47, 27.8]	48.1	reject
Lognormal[25.6, 2.36, 0.613]	13.5	reject
Inverse Gaussian[25.6, 25.2, 12.1]	0.783	reject
Triangular[24.6, 58.7, 33.7]	0.23	reject
Pearson 5[25.6, 2.12, 17.3]	0.219	reject
Pareto[25.6, 2.67]	0	reject
Exponential[25.6, 12.1]	0	reject
Uniform[25.6, 57.7]	0	reject

Gambar C.9 Uji Distribusi Simulasi Tamiya 86 unit/jam (2)

## 3.3 Stasiun 3

**Auto::Fit Distributions**

distribution	rank	acceptance
Log-Logistic[18.3, 4.42, 10.5]	89	accept
Pearson 6[18.3, 4.95e+04, 6.42, 2.93e+04]	64	accept
Weibull[18.3, 2.96, 12.1]	61	accept
Erlang[18.3, 7, 1.53]	56.7	accept
Gamma[18.3, 6.9, 1.55]	55.1	accept
Beta[18.3, 40.1, 3.27, 3.37]	27.3	accept
Lognormal[18.3, 2.3, 0.475]	4.63	reject
Inverse Gaussian[18.3, 39.6, 10.7]	0.21	reject
Pearson 5[18.3, 3.18, 26.8]	0.0201	reject
Exponential[18.3, 10.7]	0	reject
Pareto[18.3, 2.22]	0	reject
Triangular[18.3, 40.2, 40]	0	reject
Uniform[18.3, 40.1]	0	reject

Gambar C.10 Uji Distribusi Simulasi Tamiya 86 unit/jam (3)

## 3.4 Stasiun 4

## Auto::Fit Distributions

distribution	rank	acceptance
<b>Weibull(20.8, 2.02, 16.5)</b>	<b>100</b>	<b>...</b>
Pearson 6(20.8, 925, 3.32, 209)	64	accept
Gamma(20.8, 3.47, 4.17)	58.8	accept
Beta(20.8, 402, 3.15, 78.8)	35.4	accept
Log-Logistic(20.8, 2.89, 13.3)	35.1	accept
Erlang(20.8, 3, 4.82)	29.9	reject
Lognormal(20.8, 2.52, 0.622)	6.8	reject
Inverse Gaussian(20.8, 31.9, 14.5)	0.872	reject
Triangular(19.8, 60.4, 32.2)	0.255	reject
Pearson 5(20.8, 2.4, 23.9)	0.119	reject
Pareto(20.8, 1.98)	0	reject
Exponential(20.8, 14.5)	0	reject
Uniform(20.8, 59.4)	0	reject

Gambar C.11 Uji Distribusi Simulasi Tamiya 86 unit/jam (4)

## 3.5 Stasiun 5

## Auto::Fit Distributions

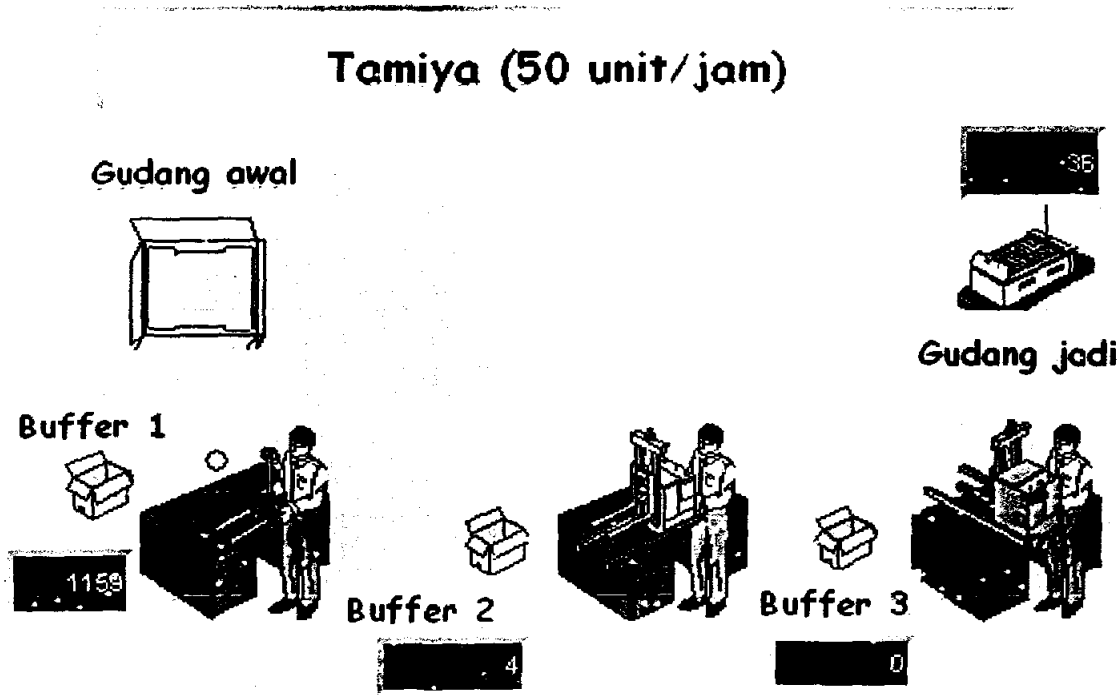
distribution	rank	acceptance
Weibull(27, 2.18, 8.81)	100	accept
Log-Logistic(27, 3.11, 7.23)	47.5	accept
Gamma(27, 3.49, 2.24)	34.7	reject
Pearson 6(27, 2.53e+03, 3.49, 1.13e+03)	34	reject
Beta(27, 110, 3.25, 31.4)	27.2	accept
Erlang(27, 3, 2.61)	15.3	reject
Lognormal(27, 1.91, 0.613)	3.06	reject
Triangular(27, 47.1, 32.6)	1.21	reject
Inverse Gaussian(27, 16.2, 7.82)	0.182	reject
Pearson 5(27, 2.2, 11.6)	0.0281	reject
Pareto(27, 4.02)	0	reject
Exponential(27, 7.82)	0	reject
Uniform(27, 46.6)	0	reject

Gambar C.12 Uji Distribusi Simulasi Tamiya 86 unit/jam (5)

LAMPIRAN D (Hasil Program Promodel)

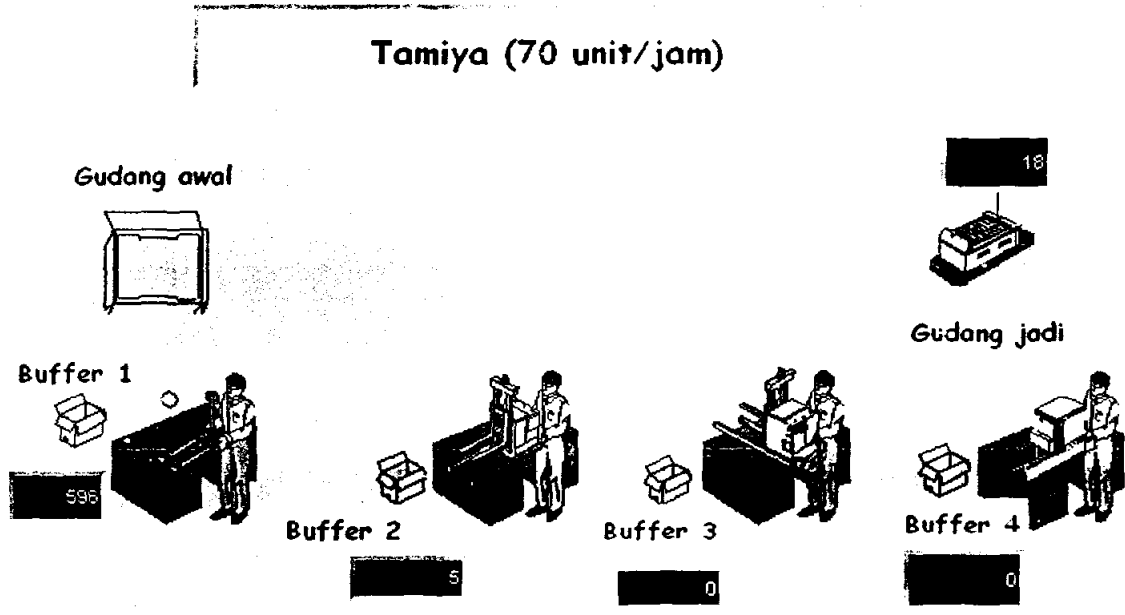
1. Contoh model simulasi untuk Program Promodel.

1.1 *Production rate* 50 unit/jam dengan 3 stasiun kerja.



Gambar D.1 Model simulasi untuk *production rate* 50 unit/jam

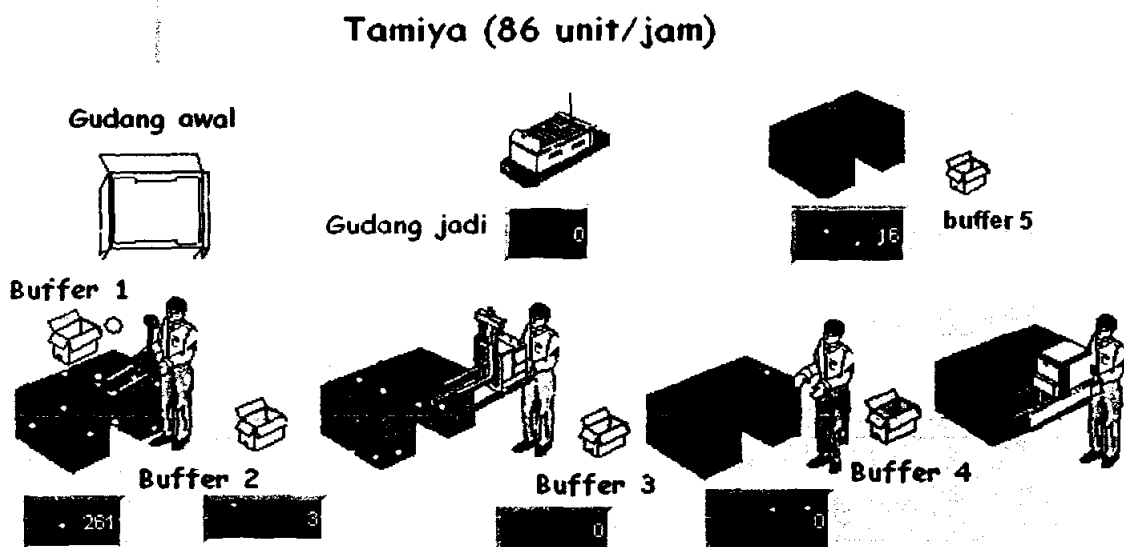
1.2 *Production rate* 70 unit/jam dengan 4 stasiun kerja.



Gambar D.2 Model simulasi untuk *production rate* 70 unit/jam



1.3 *Production rate* 86 unit/jam dengan 5 stasiun kerja.



Gambar D.3 Model simulasi untuk *production rate* 86 unit/jam

## 2. Contoh Laporan dari program Promodel.

### 2.1 Contoh Laporan untuk *production rate* 50 unit per jam dengan 3 stasiun kerja.

#### General Report

Output from G:\SKRIPSI\Akhir\promod 3\3 SK-50 UNIT.MOD

Date: May/29/2005 Time: 09:54:26 PM

Scenario : Normal Run  
Replication : Average  
Period : Final Report (0 sec to 10 hr Elapsed: 10 hr)  
Simulation Time : 10 hr

#### LOCATIONS

Location Name	Scheduled Hours	Capacity	Total Entries	Average Seconds Per Entry	Average Contents	Maximum Contents	Current Contents	% Util	
St 1	10	1	433.4	74.765726	0.900074	1	1	90.01	(Average)
St 1	0	0	2.27058	0.388588	0.000294251	0	0	0.03	(Std. Dev.)
St 2	10	1	429.6	82.176341	0.980601	1	1	98.06	(Average)
St 2	0	0	2.36643	0.712591	0.00468636	0	0	0.47	(Std. Dev.)
St 3	10	1	429.6	67.131719	0.801102	1	0.9	80.11	(Average)
St 3	0	0	2.36643	0.201572	0.00443455	0	0.316228	0.44	(Std. Dev.)
Buffer 1	10	999999	7078	16957.164367	3334.34	6645.1	6644.6	0.33	(Average)
Buffer 1	0	0	213.323	211.752672	120.833	213.626	213.789	0.01	(Std. Dev.)
Buffer 2	10	7	433.4	241.038064	2.90136	7	3.8	41.45	(Average)
Buffer 2	0	0	2.27058	16.745542	0.196143	0	0.788811	2.80	(Std. Dev.)
Buffer 3	10	7	429.6	0.785886	0.00938181	1	0	0.13	(Average)
Buffer 3	0	0	2.36643	0.105576	0.00128928	0	0	0.02	(Std. Dev.)
Gudang awal	10	999999	7078	0.000000	0	1	0	0.00	(Average)
Gudang awal	0	0	213.323	0.000000	0	0	0	0.00	(Std. Dev.)
Gudang jadi	10	999999	428.7	0.000000	0	1	0	0.00	(Average)
Gudang jadi	0	0	2.40601	0.000000	0	0	0	0.00	(Std. Dev.)

## LOCATION STATES BY PERCENTAGE (Multiple Capacity)

Location Name	Scheduled Hours	% Empty	% Partially Occupied	% Full	% Down	
-----	-----	-----	-----	-----	-----	-----
Buffer 1	10	0.00	100.00	0.00	0.00	(Average)
Buffer 1	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Buffer 2	10	12.06	83.18	4.76	0.00	(Average)
Buffer 2	0	2.06	1.92	2.28	0.00	(Std. Dev.)
Buffer 3	10	99.06	0.94	0.00	0.00	(Average)
Buffer 3	0	0.13	0.13	0.00	0.00	(Std. Dev.)
Gudang awal	10	100.00	0.00	0.00	0.00	(Average)
Gudang awal	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Gudang jadi	10	100.00	0.00	0.00	0.00	(Average)
Gudang jadi	0	0.00	0.00	0.00	0.00	(Std. Dev.)

## LOCATION STATES BY PERCENTAGE (Single Capacity)

Location Name	Scheduled Hours	% Operation	% Setup	% Idle	% Waiting	% Blocked	% Down	
-----	-----	-----	-----	-----	-----	-----	-----	-----
St 1	10	89.67	0.00	0.00	0.00	0.34	9.99	(Average)
St 1	0	0.24	0.00	0.00	0.00	0.24	0.03	(Std. Dev.)
St 2	10	98.06	0.00	1.94	0.00	0.00	0.00	(Average)
St 2	0	0.47	0.00	0.47	0.00	0.00	0.00	(Std. Dev.)
St 3	10	80.11	0.00	19.89	0.00	0.00	0.00	(Average)
St 3	0	0.44	0.00	0.44	0.00	0.00	0.00	(Std. Dev.)

## FAILED ARRIVALS

Entity Name	Location Name	Total Failed	
-----	-----	-----	-----
mentahan	Gudang awal	0	(Average)
mentahan	Gudang awal	0	(Std. Dev.)
rakitan 1	Buffer 2	0	(Average)

rakitan 1	Buffer 2	0	(Std. Dev.)
rakitan 2	Buffer 3	0	(Average)
rakitan 2	Buffer 3	0	(Std. Dev.)

# ENTITY ACTIVITY

Entity Name	Total Exits	Current Quantity In System	Average Seconds In System	Average Seconds In Move Logic	Average Seconds Wait For Res, etc.	Average Seconds In Operation	Average Seconds Blocked	
mentahan	0	6645.6	-	-	-	-	-	(Average)
mentahan	0	213.789	-	-	-	-	-	(Std. Dev.)
rakitan 1	0	4.8	-	-	-	-	-	(Average)
rakitan 1	0	0.788811	-	-	-	-	-	(Std. Dev.)
rakitan 2	0	0.9	-	-	-	-	-	(Average)
rakitan 2	0	0.316228	-	-	-	-	-	(Std. Dev.)
rakitan 3	0	0	-	-	-	-	-	(Average)
rakitan 3	0	0	-	-	-	-	-	(Std. Dev.)
tamiya	428.7	0	16956.405782	0.000000	0.000000	223.486121	16732.919661	(Average)
tamiya	2.40601	0	95.611256	0.000000	0.000000	1.034832	95.939682	(Std. Dev.)

# ENTITY STATES BY PERCENTAGE

Entity Name	In Move Logic	Wait For Res, etc.	In Operation	Blocked	
tamiya	0.00	0.00	1.32	98.68	(Average)
tamiya	0.00	0.00	0.01	0.01	(Std. Dev.)

# VARIABLES

Variable Name	Total Changes	Average Seconds Per Change	Minimum Value	Maximum Value	Current Value	Average Value	
Output	428.7	83.860752	0	428.7	428.7	214.65	(Average)
Output	2.40601	0.424009	0	2.40601	2.40601	1.2367	(Std. Dev.)

Var1	14589.4	2.467804	0	13723.1	13722.6	6886.92	(Average)
Var1	426.197	0.071776	0	426.944	427.106	241.597	(Std. Dev.)
Var2	863	41.683140	0	7	3.8	2.90136	(Average)
Var2	4.57044	0.207697	0	0	0.788811	0.196143	(Std. Dev.)
Var3	859.2	41.855632	0	1	0	0.00938181	(Average)
Var3	4.73286	0.215590	0	0	0	0.00128928	(Std. Dev.)

Gambar D.4 Laporan Promodel untuk production rate = 50 unit/jam dengan jumlah buffer = 7

## 2.2 Contoh Laporan untuk *production rate* 70 unit per jam dengan 4 stasiun kerja.

```

-----
General Report
Output from G:\SKRIPSI\Akhir\promod 3\4 SK-70 UNIT.MOD
Date: May/29/2005   Time: 10:10:17 PM
-----
Scenario      : Normal Run
Replication    : Average
Period        : Final Report (0 sec to 10 hr Elapsed: 10 hr)
Simulation Time : 10 hr
-----

```

### LOCATIONS

Location Name	Scheduled Hours	Capacity	Total Entries	Average Seconds Per Entry	Average Contents	Maximum Contents	Current Contents	% Util	
St 1	10	1	595.8	45.078486	0.746044	1	1	74.60	(Average)
St 1	0	0	1.61933	0.126348	0.000548401	0	0	0.05	(Std. Dev.)
St 2	10	1	585.7	60.083261	0.977513	1	1	97.75	(Average)
St 2	0	0	1.76698	0.281664	0.00347651	0	0	0.35	(Std. Dev.)
St 3	10	1	585.7	45.310995	0.737187	1	0.7	73.72	(Average)
St 3	0	0	1.76698	0.140728	0.00375028	0	0.483046	0.38	(Std. Dev.)
St 4	10	1	586	8.415762	0.136986	1	0.2	13.70	(Average)
St 4	0	0	1.94365	0.167664	0.00253158	0	0.421637	0.25	(Std. Dev.)
Buffer 1	10	999999	6958	16411.095222	3172.73	6363.2	6362.2	0.32	(Average)
Buffer 1	0	0	183.715	315.878165	128.84	183.565	183.821	0.01	(Std. Dev.)

Buffer 2	10	11	595.8	305.988254	5.06381	11	10.1	46.03	(Average)
Buffer 2	0	0	1.61933	19.091367	0.311103	0	0.994429	2.83	(Std. Dev.)
Buffer 3	10	11	585.7	0.006183	0.000100611	1	0	0.00	(Average)
Buffer 3	0	0	1.76698	0.003693	6.00983e-05	0	0	0.00	(Std. Dev.)
Buffer 4	10	11	586	0.000000	0	1	0	0.00	(Average)
Buffer 4	0	0	1.94365	0.000000	0	0	0	0.00	(Std. Dev.)
Gudang awal	10	999999	6958	0.000000	0	1	0	0.00	(Average)
Gudang awal	0	0	183.715	0.000000	0	0	0	0.00	(Std. Dev.)
Gudang jadi	10	999999	585.8	0.000000	0	1	0	0.00	(Average)
Gudang jadi	0	0	1.8738	0.000000	0	0	0	0.00	(Std. Dev.)

# LOCATION STATES BY PERCENTAGE (Multiple Capacity)

Location Name	Scheduled Hours	% Empty	% Partially Occupied	% Full	% Down	
-----	-----	-----	-----	-----	-----	
Buffer 1	10	0.00	100.00	0.00	0.00	(Average)
Buffer 1	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Buffer 2	10	6.52	91.17	2.31	0.00	(Average)
Buffer 2	0	1.52	0.53	1.63	0.00	(Std. Dev.)
Buffer 3	10	99.99	0.01	0.00	0.00	(Average)
Buffer 3	0	0.01	0.01	0.00	0.00	(Std. Dev.)
Buffer 4	10	100.00	0.00	0.00	0.00	(Average)
Buffer 4	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Gudang awal	10	100.00	0.00	0.00	0.00	(Average)
Gudang awal	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Gudang jadi	10	100.00	0.00	0.00	0.00	(Average)
Gudang jadi	0	0.00	0.00	0.00	0.00	(Std. Dev.)

# LOCATION STATES BY PERCENTAGE (Single Capacity)

Location Name	Scheduled Hours	% Operation	% Setup	% Idle	% Waiting	% Blocked	% Down	
St 1	10	74.43	0.00	0.00	0.00	0.18	25.40	(Average)
St 1	0	0.19	0.00	0.00	0.00	0.18	0.05	(Std. Dev.)
St 2	10	97.75	0.00	2.25	0.00	0.00	0.00	(Average)
St 2	0	0.35	0.00	0.35	0.00	0.00	0.00	(Std. Dev.)
St 3	10	73.72	0.00	26.28	0.00	0.00	0.00	(Average)
St 3	0	0.38	0.00	0.38	0.00	0.00	0.00	(Std. Dev.)
St 4	10	13.70	0.00	86.30	0.00	0.00	0.00	(Average)
St 4	0	0.25	0.00	0.25	0.00	0.00	0.00	(Std. Dev.)

## FAILED ARRIVALS

Entity Name	Location Name	Total Failed	
mentahan	Gudang awal	0	(Average)
mentahan	Gudang awal	0	(Std. Dev.)
rakitan 1	Buffer 2	0	(Average)
rakitan 1	Buffer 2	0	(Std. Dev.)
rakitan 2	Buffer 3	0	(Average)
rakitan 2	Buffer 3	0	(Std. Dev.)
rakitan 3	Buffer 4	0	(Average)
rakitan 3	Buffer 4	0	(Std. Dev.)

# ENTITY ACTIVITY

Entity Name	Total Exits	Current Quantity In System	Average Seconds In System	Average Seconds In Move Logic	Average Seconds Wait For Res, etc.	Average Seconds In Operation	Average Seconds Blocked	
mentahan	0	6363.2	-	-	-	-	-	(Average)
mentahan	0	183.821	-	-	-	-	-	(Std. Dev.)
rakitan 1	0	11.1	-	-	-	-	-	(Average)
rakitan 1	0	0.994429	-	-	-	-	-	(Std. Dev.)
rakitan 2	0	0.7	-	-	-	-	-	(Average)
rakitan 2	0	0.483046	-	-	-	-	-	(Std. Dev.)
rakitan 3	0	0.2	-	-	-	-	-	(Average)
rakitan 3	0	0.421637	-	-	-	-	-	(Std. Dev.)
tamiya	585.8	0	16774.766893	0.000000	0.000000	158.383424	16616.383469	(Average)
tamiya	1.8738	0	174.796075	0.000000	0.000000	0.414590	174.624122	(Std. Dev.)

## ENTITY STATES BY PERCENTAGE

Entity Name	% In Move Logic	% Wait For Res, etc.	% In Operation	% Blocked	
tamiya	0.00	0.00	0.94	99.06	(Average)
tamiya	0.00	0.00	0.01	0.01	(Std. Dev.)

## VARIABLES

Variable Name	Total Changes	Average Seconds Per Change	Minimum Value	Maximum Value	Current Value	Average Value	
Output	585.8	61.396230	0	585.8	585.8	288.766	(Average)
Output	1.8738	0.205035	0	1.8738	1.8738	1.24494	(Std. Dev.)
Var1	14511.8	2.481186	0	13321.2	13320.2	6638.9	(Average)



Var1	367.334	0.062357	0	367.277	367.532	257.475	(Std. Dev.)
Var2	1181.5	30.458373	0	11	10.1	5.06381	(Average)
Var2	3.24037	0.085121	0	0	0.994429	0.311103	(Std. Dev.)
Var3	1171.4	30.704062	0	1	0	0.000100611	(Average)
Var3	3.53396	0.102538	0	0	0	6.00983e-05	(Std. Dev.)
Var4	1172	30.690342	0	1	0	0	(Average)
Var4	3.8873	0.102590	0	0	0	0	(Std. Dev.)

Gambar D.5 Laporan Promodel untuk production rate = 70 unit/jam dengan jumlah buffer = 11

### 2.3 Contoh Laporan untuk *production rate* 86 unit per jam dengan 5 stasiun kerja.

#### General Report

Output from G:\SKRIPSI\Akhir\PROMOD~1\5SK-88~1.MOD

Date: May/29/2005 Time: 10:18:30 PM

Scenario : Normal Run  
Replication : Average  
Period : Final Report (0 sec to 10 hr Elapsed; 10 hr)  
Simulation Time : 10 hr

#### LOCATIONS

Location Name	Scheduled Hours	Capacity	Total Entries	Average Seconds Per Entry	Average Contents	Maximum Contents	Current Contents	% Util	
St 1	10	1	831.1	38.167021	0.881115	1	1	88.11	(Average)
St 1	0	0	3.47851	0.154144	0.000394238	0	0	0.04	(Std. Dev.)
St 2	10	1	819.9	43.856265	0.998814	1	1	99.88	(Average)
St 2	0	0	3.31495	0.159001	0.00111074	0	0	0.11	(Std. Dev.)
St 3	10	1	819.9	10.698512	0.243657	1	0.2	24.37	(Average)
St 3	0	0	3.31495	0.063104	0.00149473	0	0.421637	0.15	(Std. Dev.)
St 4	10	1	820.6	35.564830	0.810687	1	0.7	81.07	(Average)
St 4	0	0	3.13404	0.307548	0.00841055	0	0.483046	0.84	(Std. Dev.)

Buffer 1	10	999999	6944	15801.356282	3047.95	6114	6112.9	0.30	(Average)
Buffer 1	0	0	173.794	261.062023	92.9076	175.06	174.889	0.01	(Std. Dev.)
Buffer 2	10	12	831.1	281.304985	6.49406	12	11.2	54.12	(Average)
Buffer 2	0	0	3.47851	14.328141	0.328418	0	1.0328	2.74	(Std. Dev.)
Buffer 3	10	12	819.9	0.000000	0	1	0	0.00	(Average)
Buffer 3	0	0	3.31495	0.000000	0	0	0	0.00	(Std. Dev.)
Buffer 4	10	12	820.7	2.791965	0.0636634	1.6	0.1	0.53	(Average)
Buffer 4	0	0	3.23351	0.410719	0.00948911	0.516398	0.316228	0.08	(Std. Dev.)
buffer 5	10	12	820.9	1.913434	0.043638	1.1	0.1	0.36	(Average)
buffer 5	0	0	3.17805	0.214696	0.00495848	0.316228	0.316228	0.04	(Std. Dev.)
stasiun 5	10	1	820.8	34.694247	0.791023	1	0.8	79.10	(Average)
stasiun 5	0	0	3.32666	0.161308	0.00379907	0	0.421637	0.38	(Std. Dev.)
Gudang awal	10	999999	6944	0.000000	0	1	0	0.00	(Average)
Gudang awal	0	0	173.794	0.000000	0	0	0	0.00	(Std. Dev.)
Gudang jadi	10	999999	820	0.000000	0	1	0	0.00	(Average)
Gudang jadi	0	0	3.43188	0.000000	0	0	0	0.00	(Std. Dev.)

# LOCATION STATES BY PERCENTAGE (Multiple Capacity)

Location Name	Scheduled Hours	% Empty	% Partially Occupied	% Full	% Down	
Buffer 1	10	0.00	100.00	0.00	0.00	(Average)
Buffer 1	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Buffer 2	10	1.71	89.06	9.22	0.00	(Average)
Buffer 2	0	0.72	2.21	2.51	0.00	(Std. Dev.)
Buffer 3	10	100.00	0.00	0.00	0.00	(Average)
Buffer 3	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Buffer 4	10	93.69	6.31	0.00	0.00	(Average)
Buffer 4	0	0.89	0.89	0.00	0.00	(Std. Dev.)
buffer 5	10	95.64	4.36	0.00	0.00	(Average)
buffer 5	0	0.50	0.50	0.00	0.00	(Std. Dev.)
Gudang awal	10	100.00	0.00	0.00	0.00	(Average)
Gudang awal	0	0.00	0.00	0.00	0.00	(Std. Dev.)
Gudang jadi	10	100.00	0.00	0.00	0.00	(Average)
Gudang jadi	0	0.00	0.00	0.00	0.00	(Std. Dev.)

# LOCATION STATES BY PERCENTAGE (Single Capacity)

Location Name	Scheduled Hours	% Operation	% Setup	% Idle	% Waiting	% Blocked	% Down	
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St 1	10	87.14	0.00	0.00	0.00	0.97	11.89	(Average)
St 1	0	0.37	0.00	0.00	0.00	0.35	0.04	(Std. Dev.)
St 2	10	99.88	0.00	0.12	0.00	0.00	0.00	(Average)
St 2	0	0.11	0.00	0.11	0.00	0.00	0.00	(Std. Dev.)
St 3	10	24.37	0.00	75.63	0.00	0.00	0.00	(Average)
St 3	0	0.15	0.00	0.15	0.00	0.00	0.00	(Std. Dev.)
St 4	10	81.07	0.00	18.93	0.00	0.00	0.00	(Average)
St 4	0	0.84	0.00	0.84	0.00	0.00	0.00	(Std. Dev.)
stasiun 5	10	79.10	0.00	20.90	0.00	0.00	0.00	(Average)
stasiun 5	0	0.38	0.00	0.38	0.00	0.00	0.00	(Std. Dev.)

## FAILED ARRIVALS

Entity Name	Location Name	Total Failed	
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mentahan	Gudang awal	0	(Average)
mentahan	Gudang awal	0	(Std. Dev.)
rakitan 1	Buffer 2	0	(Average)
rakitan 1	Buffer 2	0	(Std. Dev.)
rakitan 2	Buffer 3	0	(Average)
rakitan 2	Buffer 3	0	(Std. Dev.)
rakitan 3	Buffer 4	0	(Average)
rakitan 3	Buffer 4	0	(Std. Dev.)
rakitan 4	buffer 5	0	(Average)
rakitan 4	buffer 5	0	(Std. Dev.)

# ENTITY ACTIVITY

Entity Name	Total Exits	Current Quantity In System	Average Seconds In System	Average Seconds In Move Logic	Average Seconds Wait For Res, etc.	Average Seconds In Operation	Average Seconds Blocked	
mentahan	0	6113.9	-	-	-	-	-	(Average)
mentahan	0	174.889	-	-	-	-	-	(Std. Dev.)
rakitan 1	0	12.2	-	-	-	-	-	(Average)
rakitan 1	0	1.0328	-	-	-	-	-	(Std. Dev.)
rakitan 2	0	0.2	-	-	-	-	-	(Average)
rakitan 2	0	0.421637	-	-	-	-	-	(Std. Dev.)
rakitan 3	0	0.8	-	-	-	-	-	(Average)
rakitan 3	0	0.632456	-	-	-	-	-	(Std. Dev.)
tamiya	820	0	15799.239536	0.000000	0.000000	162.223200	15637.016336	(Average)
tamiya	3.43188	0	162.146551	0.000000	0.000000	0.409874	162.329423	(Std. Dev.)
rakitan 4	0	0.9	-	-	-	-	-	(Average)
rakitan 4	0	0.567646	-	-	-	-	-	(Std. Dev.)

## ENTITY STATES BY PERCENTAGE

Entity Name	% In Move Logic	% Wait For Res, etc.	% In Operation	% Blocked	
tamiya	0.00	0.00	1.03	98.97	(Average)
tamiya	0.00	0.00	0.01	0.01	(Std. Dev.)

# VARIABLES

Variable Name	Total Changes	Average Seconds Per Change	Minimum Value	Maximum Value	Current Value	Average Value	
Output	820	43.871856	0	820	820	410.234	(Average)
Output	3.43188	0.174439	0	3.43188	3.43188	1.52885	(Std. Dev.)
Var1	14719.1	2.445789	0	13058	13056.9	6512.47	(Average)
Var1	346.541	0.057463	0	348.835	348.668	185.472	(Std. Dev.)
Var2	1651	21.795603	0	12	11.2	6.49406	(Average)
Var2	6.71648	0.087183	0	0	1.0328	0.328418	(Std. Dev.)
Var3	1639.8	21.938007	0	1	0	0	(Average)
Var3	6.6299	0.090346	0	0	0	0	(Std. Dev.)
Var4	1641.3	21.918874	0	1.6	0.1	0.0636634	(Average)
Var4	6.36047	0.088723	0	0.516398	0.316228	0.00948911	(Std. Dev.)
Var5	1641.7	21.916924	0	1.1	0.1	0.043638	(Average)
Var5	6.49872	0.089094	0	0.316228	0.316228	0.00495848	(Std. Dev.)

Gambar D.6 Laporan Promodel untuk production rate = 86 unit/jam dengan jumlah buffer = 12

